

Lake Ōkaro / Ngakaro

INFOSHEET 2, DECEMBER 2017

This information sheet has been prepared for Te Arawa whānau to summarise information about:

- *research and monitoring occurring on Lake Ōkaro.*
- *projects occurring on, and adjacent to Lake Ōkaro, particularly efforts to reduce the impacts of land use on lake water quality.*

It will be reviewed and updated annually.

Lake Ōkaro/Ngakaro is the smallest of the Rotorua lakes under public management. Rotorua Lakes Council has resolved to transfer ownership of the bed of Lake Ōkaro to TALT, requiring an amendment to the Te Arawa Lakes Settlement Act 2006.

IWI

Ngāti Tahu-Ngāti Whaoa

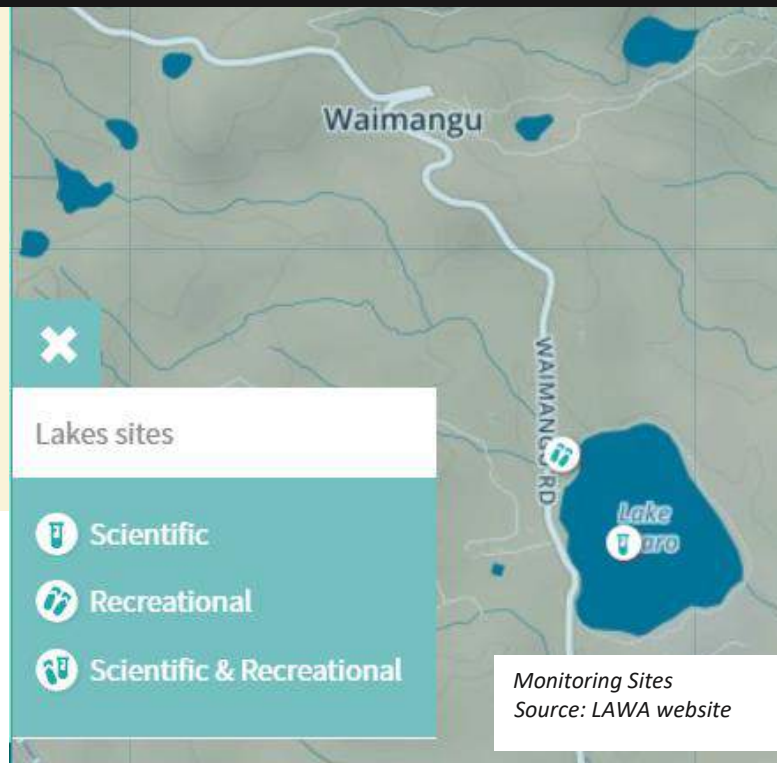
AT A GLANCE

Lake size:	31 ha
Catchment area:	367 ha
Elevation:	419 m
Average depth:	12.5 m
Deepest point:	18 m

WATER QUALITY MONITORING

The Regional Council carries out regular monitoring of Lake Ōkaro. This includes:

- **Swimming water quality** – One site measured from October to June. Any health warnings are posted on the Regional Council and Toi Te Ora Public Health websites.
- **Scientific** – One site measured monthly for clarity, algae, phosphorous and nitrogen. Result articulated as an annual Trophic Level Index or TLI.



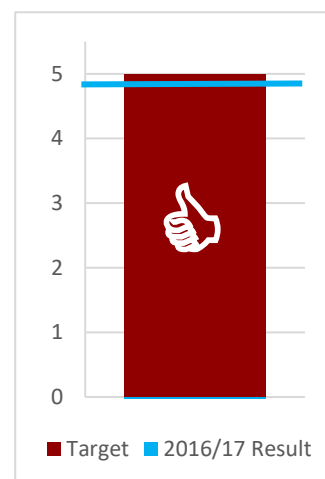
WATER QUALITY STATUS

The Trophic Level Index (TLI) is used to give an overall picture of the health of Lake Ōkaro.

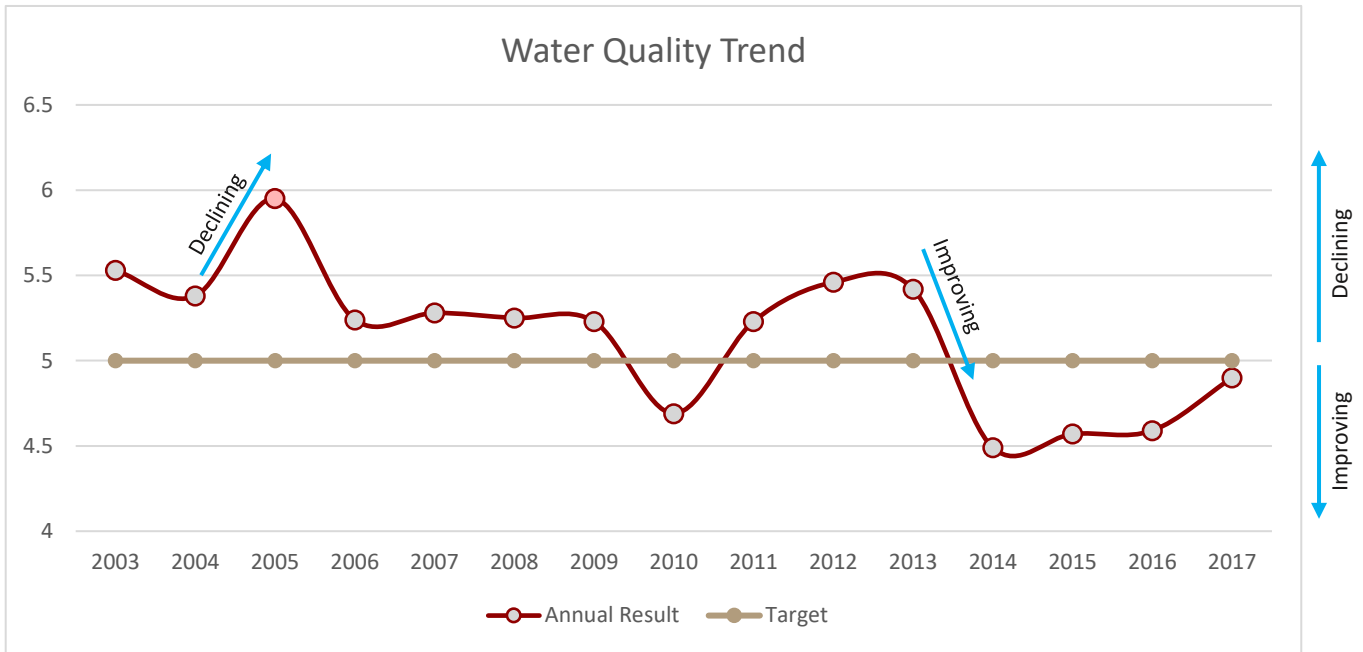
TLI target met. For the 2016/17 year, the TLI was 4.9, below the target of 5.

WATER QUALITY TREND

Water quality within Lake Ōkaro has fluctuated over the last 10 years.



Target TLI has been achieved since 2014, mainly due to the effectiveness of in-lake phosphorous treatment (alum), which is intended as a short to medium term option. Ongoing improvements to land use and management is the way of effecting long term change.



FISHERIES RESEARCH & MONITORING

Includes, but is not limited to:

Taonga fish species research, NIWA, 2007

- ▶ Kōaro is extinct in this lake
- ▶ Kākahi, tuna and kōura were present

Kōura Monitoring Programme , Kusabs, 2017

- Monitoring carried out in March 2016, June 2016 and November 2016 and February 2017.
- No kōura were collected in Lake Ōkaro despite recent improvements in water quality.
- More improvement needed before kōura populations can reestablish.

TE ARAWA MONITORING

Te Arawa Lakes Trust is embarking on a project to measure and monitor the cultural health of Lake Ōkaro using indicators that are more meaningful to us. This may be based on the following:

- Can I swim here?
- Can I gather food here?

We will also continue working with Dr Ian Kusabs who monitors kōura populations in our lakes using tau (bracken fern bundles).

LAKE ACTION PLANS

Lake Ōkaro Action Plan 2009 - This Plan comprises four actions to improve the water quality in Lake Ōkaro. This has resulted in projects for the regional council, district council and catchment landowners.
<http://www.rotorualakes.co.nz/vdb/document/73>

Lake Tarawera Restoration Plan 2015 - Lake Ōkaro is also covered by the actions within the Tarawera Lakes Restoration Plan as it is one of the outer catchment lakes.
<http://www.rotorualakes.co.nz/vdb/document/1049>

ACTION PLAN PROJECTS

Includes, but is not limited to:

Project	Status
A large wetland was constructed in May 2005 to remove nitrogen from the two main streams entering Lake Ōkaro.	Completed
In lake phosphorous treatment carried out along with alum dosing. A pH-monitoring buoy is in place to identify times suitable for dosing.	Ongoing, as needed
Cultural Monitoring - measure and monitor the cultural health of Lake Tarawera and all lakes that feed into it, including Lake Ōkaro. This project will be led by TALT.	In planning

WHERE TO FIND MORE INFORMATION

- www.tearawa.iwi.nz
- www.rotorualakes.co.nz
- www.lawa.org.nz

Te Arawa Lakes Trust
 Rotorua Te Arawa Lakes Programme
 Land Air Water Aotearoa